

Appin. No. 10/069,282

Amd. dated April 30, 2004

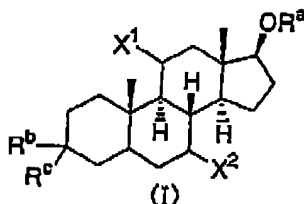
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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A compound represented by the general formula (I), pharmaceutically acceptable salts thereof, or prodrugs of the compound or its salts:



wherein X¹ represents a hydrogen atom and X² represent independently a hydrogen atom or represents a group represented by the general formula (II)

-Ar-A-R¹ (II)

R^a represents a hydrogen atom or a protective group of a hydroxyl group, R^b and R^c, when taken together with the carbon atom in 3-position to which they are bound, represent an optionally protected -(C=O)-, and the dashed line in combination with the solid line represents the formation of a single bond or a double bond;

in addition, Ar represents a single bond or an

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aromatic hydrocarbon group, A represents a methylene group or -O-, R¹ represents an optionally substituted alkyl group, an optionally substituted alkenyl group or an optionally substituted alkynyl group;

provided that when R^a represents a hydrogen atom and R^b and R^c represent -(C=O)-, X² is not a propyl group or an allyl group [X¹ and X² are not a hydrogen atom at the same time].

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Claim 2 (Currently Amended): The compound according to claim 1, pharmaceutically acceptable salts thereof, or prodrugs of the compound or its salts, wherein R¹ is R^{1a} [where R^{1a} is the general formula (III)]

-G-E-J-Y-L-Q-Z (III)

{wherein G represents an optionally substituted straight-chained or branched alkylene group having 1 - 30 carbon atoms, an optionally substituted straight-chained or branched alkenylene groups having 2 - 30 carbon atoms or an optionally substituted straight-chained or branched alkynylene group having 2 - 30 carbon atoms, E represents a single bond or -O-, J represents a single bond, an optionally substituted aromatic hydrocarbon group or an optionally substituted heterocyclic group, Y represents a single bond or -O-, L represents a single bond, a straight-chained or branched

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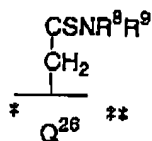
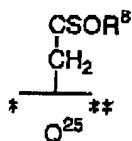
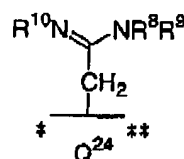
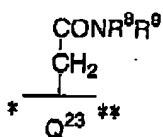
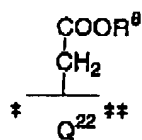
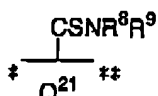
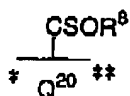
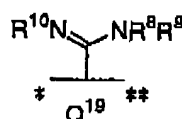
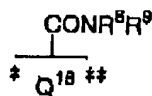
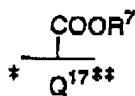
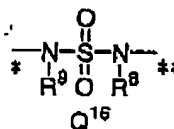
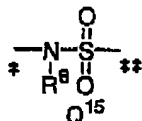
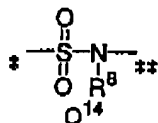
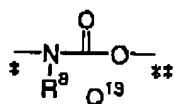
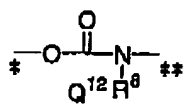
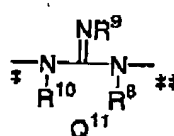
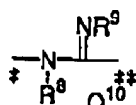
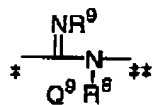
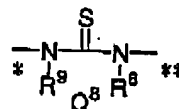
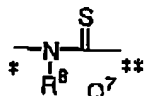
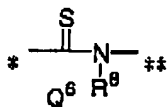
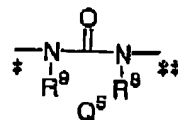
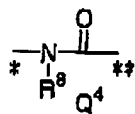
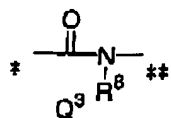
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alkylene group having 1 - 10 carbon atoms, a straight-chained or branched alkenylene group having 2 - 10 carbon atoms or a straight-chained or branched alkynylene group having 2 - 10 carbon atoms, Q represents a single bond or one group selected from among the following formulae:

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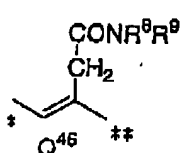
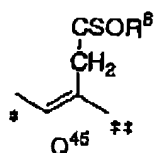
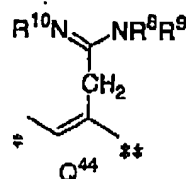
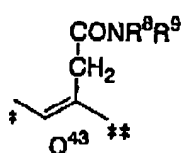
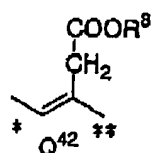
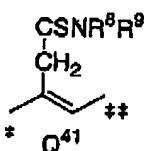
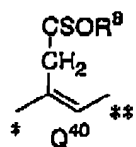
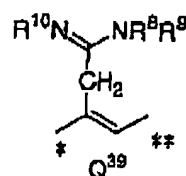
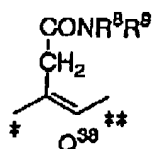
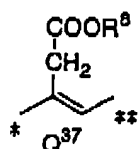
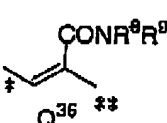
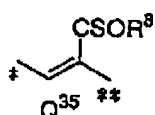
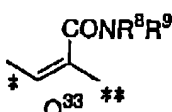
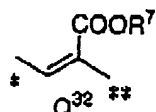
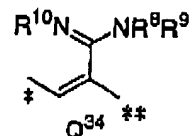
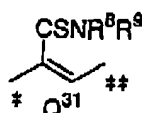
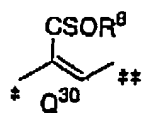
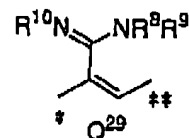
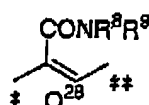
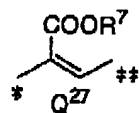
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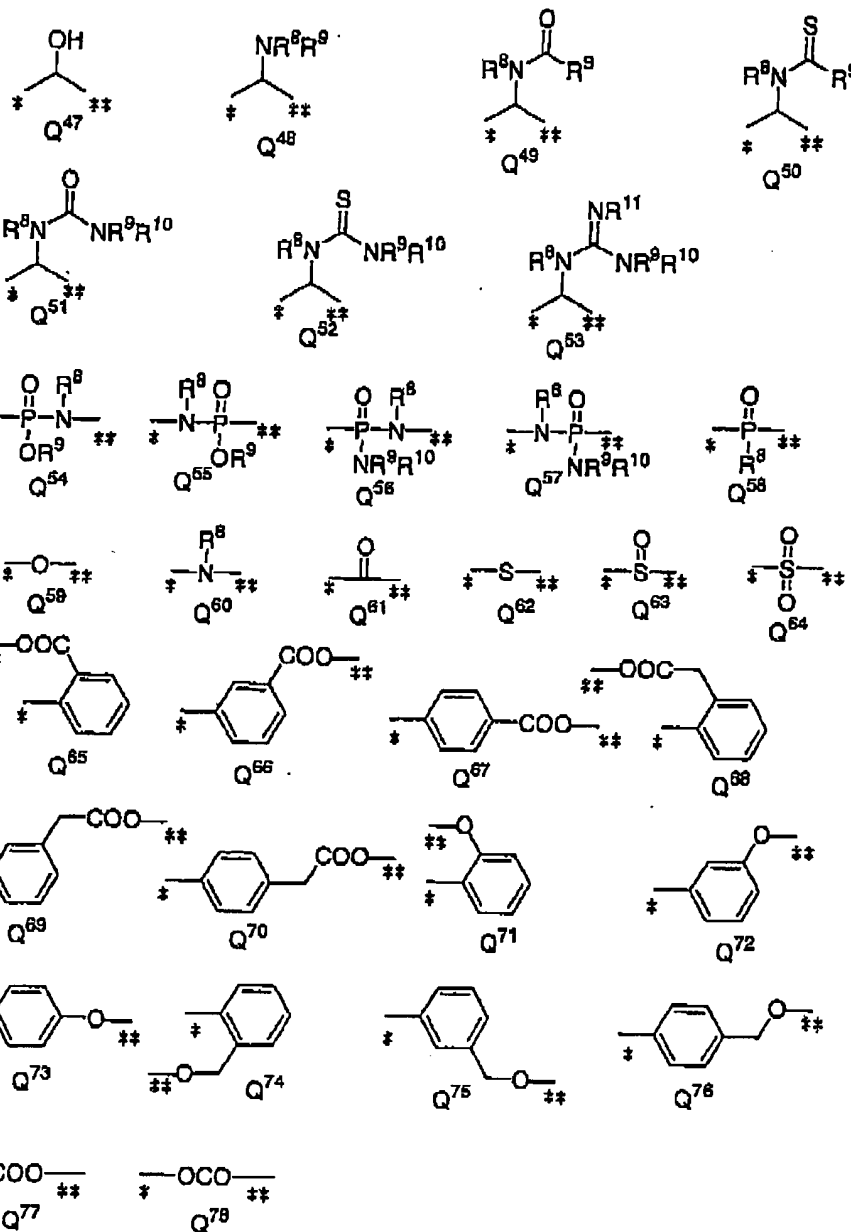


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(where R⁷ and R⁸ represent independently a hydrogen atom or a straight-chained or branched lower alkyl group having 1 - 6 carbon atoms, R⁹, R¹⁰ and R¹¹ each independently represent a hydrogen atom or a straight-chained or branched lower alkyl group having 1 - 3 carbon atoms), Z represents a hydrogen

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atom, a straight-chained or branched alkyl group having 1 - 10 carbon atoms that may optionally be substituted by a halogen atom, a straight-chained or branched alkenyl group having 2 - 10 carbon atoms that may optionally be substituted by a halogen atom, a straight-chained or branched alkynyl group having 2 - 10 carbon atoms that may optionally be substituted by a halogen atom, $-O-R^d$ (where R^d represents a hydrogen atom or a protective group of a hydroxyl group), or $-COOH$, provided that when Q is Q^3 , the nitrogen atom and R^8 in Q^3 may combine with Z to form a heterocyclic group]].

Claim 3 (Previously Presented): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of said compound or its salt thereof, wherein Q is Q^2 (where Q^2 represents a single bond), Q^{62} , Q^{63} , Q^{64} , Q^3 (where R^8 has the same meaning as defined above), Q^4 (where R^8 has the same meaning as defined above), Q^{17} (where R^7 has the same meaning as defined above), Q^{32} (where R^7 has the same meaning as defined above) or Q^{27} (where R^7 has the same meaning as defined above).

Claim 4 (Previously Presented): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of said compound or a salt thereof, wherein X^1 is $-Ar-A-R^1$ (wherein Ar , A and R^1 have the same

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meanings as defined above) and X^2 is a hydrogen atom.

Claim 5 (Currently Amended): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of said compound or a salt thereof, wherein X^1 is a hydrogen atom and X^2 is $-\text{Ar}-\text{A}-\text{R}^1$ (wherein Ar, A and R^1 have the same meanings as defined above in claim 1).

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cont.
Claim 6 (Cancelled)

Claim 7 (Cancelled)

Claim 8 (Amended): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein the steric configuration of X^2 in 7-position is α -configuration.

Claim 9 (Amended): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Z is a straight-chained or branched alkyl group having 1 - 10 carbon atoms which optionally is substituted by a halogen atom.

Claim 10 (Original): The compound according to claim 9, pharmaceutically acceptable salts thereof, or prodrugs of the compound or its salts, wherein Z is a 4,4,5,5,5-pentafluoropentyl group.

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Claim 11 (Previously Presented): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein J is a single bond.

Claim 12 (Previously Presented): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Ar is a single bond.

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cont.
Claim 13 (Previously Presented): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein A is a methylene group.

Claim 14 (Previously Presented): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Q is Q⁶², Q⁶³ or Q⁶⁴.

Claim 15 (Previously Presented): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Q is Q³ where R⁸ is a hydrogen atom or Q⁴ where R⁸ is a hydrogen atom.

Claim 16 (Previously Presented): The compound

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according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Q is Q^{17} where R^7 is a hydrogen atom, Q^{32} where R^7 is a hydrogen atom or Q^{27} where R^7 is a hydrogen atom.

Claim 17 (Previously Presented): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein Ar is an aromatic hydrocarbon group and A is -O-.

Claim 18 (Previously Presented): The compound according to claim 2, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, wherein G is an optionally substituted straight-chained alkylene group having 2 - 15 carbon atoms.

Claim 23 (Previously Presented): The compound according to claim 1, a pharmaceutically acceptable salt thereof, or a prodrug of the compound or its salt, which is selected from the group consisting of

17 β -hydroxy-7 α -(7-(N,N-dimethylaminocarbonyl)heptyl)-5 \square -androstan-3-one;

17 β -hydroxy-7 α -(7-(N-ethylaminocarbonyl)heptyl)-5 \square -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-(isopropylaminocarbonyl)heptyl)]-5 \square -androstan-3-one;

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17 β -hydroxy-7 α -[7-(N-methyl-N-butylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N,N-diethylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(piperidinocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-(2-furylmethyl)aminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(7-(N-methylaminocarbonyl)heptyl)-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-methyl-N-ethylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-methyl-N-propylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-methyl-N-isopropylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(N-methyl-N-benzylaminocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(1-pyrrolidinylcarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[7-(morpholinocarbonyl)heptyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[9-(N,N-dimethylaminocarbonyl)nonyl]-5 α -androstan-3-one;

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17 β -hydroxy-7 α -[9-(N,N-diethylaminocarbonyl)nonyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[9-(N-methyl-N-butylaminocarbonyl)nonyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[9-(N-methyl-N-propylaminocarbonyl)nonyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[9-(morpholinocarbonyl)nonyl]-5 α -androstan-3-
one;

17 β -hydroxy-7 α -[10-(N,N-dimethylaminocarbonyl)decyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[7-{N-(2-hydroxyethyl)aminocarbonyl}heptyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[7-(N-propylaminocarbonyl)heptyl]-5 α -androstan-
3-one;

17 β -hydroxy-7 α -[7-(N-benzylaminocarbonyl)heptyl]-5 α -androstan-
3-one;

17 β -hydroxy-7 α -[7-{N-(2-phenylethyl)aminocarbonyl}heptyl]-5 α -
androstan-3-one;

17 β -hydroxy-11 α -[9-(N,N-diethylaminocarbonyl)nonyl]-5 α -
androstan-3-one;

17 β -hydroxy-7 α -[3-[3-{3-(N-
methylaminocarbonyl)propoxy}phenyl]propyl]-5 α -androstan-3-one;

17 β -hydroxy-7 α -[3-[3-{3-(N,N-
dimethylaminocarbonyl)propoxy}phenyl]propyl]-5 α -androstan-3-

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one; and

17 β -hydroxy-7 α -[3-[3-{4-(1-

pyrrolidinylcarbonyl)butoxy}phenyl]propyl]-5 α -androstan-3-

one.